*Aalhus, J., 999
Achard, F., 663
Achtymichuk, G., 463
Aherne, F. X., 221, 299, 421, 677
Ainsworth, L., 1
*Ali, T. E., 1024
*Allan, B. B., 1023
Allen, O. B., 751
Anderson, D. M., 213, 949
*Anderson, D. M., 1002, 1003
Anstead, J. R., 381
Arscott, G. H., 707
Atteh, J. O., 699
Atwal, A. S., 925
*Atwal, A. S., 1011

*Ball, R. O., 998
Bareeba, F. B., 871
*Bavino, H., 1013
Bassendowski, K. A., 855
*Bate, L. A., 1012
Batra, T. R., 27, 269, 511, 751
*Batra, T. R., 1025
Bayley, H. S., 455
*Bayley, H. S., 998
Beames, R. M., 993
Bell, J. M., 201, 429, 655
Berg, R. T., 255
*Berg, R. T., 1000
Berger, L. L., 373
Berzins, R., 233, 349
*Bilanski, W. K., 1006
Blair, R., 655
*Block, E., 997, 999, 1009, 1018
*Boucher, J. M., 1006
Bowland, J. P., 213, 949
*Bowland, J. P., 1002
Boylan, W. J., 497
*Buchanan-Smith, J. G., 1003, 1007, 1016, 1017
Buckley, K. E., 89, 97
*Brockman, R. P., 1020
*Burgess, P. L., 1005, 1016
Burgess, T. D., 303, 885
*Burgess, T. D., 1020
*Burgoyne, K., 1001
Burnside, E. B., 39, 781
*Burnside, E. B., 1009, 1017, 1024, 1025
*Burton, J. H., 1002, 1003, 1010, 1017
*Bush, R. S., 1016
Butler, G., 861
*Butson, S., 1017, 1021

Cathcart, E. B., 173
*Chai, K., 1007
Chambers, J. R., 247
*Chan, C. W., 1012
*Chaplin, R. K., 1000
Charbonneau, P., 59
*Chaudhary, Z., 1017
Chavez, E. R., 239, 683
*Chavez, E. R., 1004, 1011, 1012
Cheeke, P. R., 391, 707
Cheng, K. W., 331
Chesnais, J. P., 269
Christensen, D. A., 623
*Christensen, D. A., 1001, 1021
Christopherson, R. J., 477
*Christopherson, R. J., 1019
Clandinin, D. R., 225, 671
Cliplef, R. L., 49
Cochran, M. I., 623
Cohen, R. D. H., 361
*Colucci, P. E., 1002
*Connor, M. L., 1019
Cooper, J. A., 361
Côté, M., 367
*Crober, D. C., 1003, 1018, 1019
Crow, G. H., 279
*Crow, G. H., 1007

*D'Aleo, L., 999
Darisse, J. P. F., 27, 269
*deBoer, G., 1020
*Des Marchais, S., 998
Devlin, T. J., 89, 97, 917
Dixon, R. M., 149
*Donefer, E., 999
Doornenbal, H., 977
*Downey, B. R., 997, 998
Dupchak, K., 303
*Dupchak, K., 1020
*Dupuis, G., 1015
Dyck, G. W., 81, 571

Elliot, J. I., 993
Emery, R. S., 155
Emmanuel, B., 355
*Emmanuel, B., 1005
Emmons, D. B., 893

*Indicates abstract only published.

Emsley, J. A. B., 269
Erfle, J. D., 181, 191

Fahey, G. C., 373
*Fairfull, R. W., 1019
Farmer, M. J., 855
Farnworth, E. R., 967
*Fiala, S., 1008
Fiser, P. S., 689, 835
Fisher, L. J., 141, 473, 587 939
*Fisher, L. J., 999
Flegal, C. J., 381
*Flipot, P., 1006
Flood, P. F., 331
*Flores, D. A., 1004
*Forbes, M. A., 1009
*Forster, T. G., 1000
Fortin, A., 551, 711, 861
Foulley, J. L., 17
Fredeen, H. T., 285, 315, 523, 791
*Fredeen, H. T., 1023
*Friars, G. W., 1003
Friend, D. W., 689, 711

*Galoma, P., 1010
Galyean, M. L., 727
*Ganesh, D., 1006, 1008
*Garino, H. J., 1005, 1013
Garnett, I., 49
*Gates, W., 1001
Gavora, J. S., 247
Gervais, P., 367
*Girard, V., 1015
Goetsch, A. L., 727
Goh, Y. K., 671
*Gonzalez, J. M., 1011
*Gowe, R. S., 1019
Grandhi, R. R., 443
*Grieve, D. G., 1017
Grigat, G. A., 117, 715
*Grovum, W. L., 1002, 1017
Grunder, A. A., 247
Gupta, U. C., 133

*Hacker, R. R., 1012
*Hayes, J. F., 998, 1021, 1022, 1023
Hale, O. M., 399
Hartin, K. E., 689
Hawrysh, Z. J., 299
Heaney, D. P., 1, 263, 631, 835
Hidiroglou, M., 251
Horton, G. M. J., 623, 855
Hoskins, V. E., 551
Howell, W. E., 279
*Howell, W. E., 1012
Howland, B. E., 67
Huber, J. T., 155
Hulan, H. W., 469, 736, 957
Humphrey, W. D., 325, 331
Hurnik, J. F., 849
*Hurnick, J. F., 1008

*Ihnat, M., 1006
*Ihssen, P. E., 1003
Ingalls, J. R., 871, 905, 917
Inhat, M., 163
Ivan, M., 163, 861
*Ivan, M., 997, 1004, 1006

*Jackson, B., 1009
Jackson, C., 595, 603
*Jansen, G. B., 1022
*Jansen, H. N., 1018
Jenkins, K. J., 893
Jeremiah, L. E., 463
Jesse, B. W., 155
Jones, J. D., 735
Jones, S. D. M., 303, 563
*Jones, S. D. M., 1000, 1003, 1008, 1020
Jørgensen, H., 233

*Kalinowski, J., 1011
Keith, M. O., 201, 429
Kennedy, B. W., 781
*Kennedy, B. W., 997
Kennedy, P. M., 477
*Kennedy, P. M., 1007, 1015
*Kennelly, J. J., 1005
*Kerr, D. E., 1000, 1020
Kinzell, J. H., 381
Kitts, W. D., 823
*Koots, K., 1007
Krehbiel, J. D., 381
*Krishnamurti, C. R., 1014
Kung, L., 155

*Laarveld, B., 1000, 1020
Langford, G. A., 855
Latrille, L., 643
*Laurin, D. E., 1012
Lawson, J. E., 285, 523, 791
Lee, A. J., 27, 269, 511
Leeson, S., 409, 699
Lefkovitch, L. P., 247
*Leonard, M., 1009
Lewandrowski, N. M., 849
Lin, C. Y., 27, 511

Ly, J., 455
Lynch, G. P., 595, 603

*MacLaren, L. A., 1000
*Macleod, G. K., 1002, 1016, 1017
MacKay, V. G., 141, 939
*MacKenzie, D. R., 1010
Magee, W. T., 381
Mahadevan, S., 181, 191
Makarechian, M., 255
*Makarechian, M., 1021
Manns, J. G., 325, 331
Mapletoft, R. J., 331
Marquardt, R. R., 89
Martin, A. H., 315, 463, 977
Martin, P. J., 105
*Mathewson, W. G., 1010
Mathison, G. W., 75, 105, 117, 715
*Mathison, G. W., 1007, 1015
Maylin, A., 455
McAllister, A. J., 27, 269, 511, 751
*McAllister, A. J., 1025
McBride, B. W., 349
*McClelland, L. A., 1025
McKay, R. M., 49
McKirdy, J. A., 871, 905
*McMillan, I., 1002, 1010
*McQueen, R. E., 1001, 1016
McRae, K. B., 957
*McWhir, J., 1024
Miller, K. P., 497
Milligan, L. P., 105, 149, 349, 355
*Milligan, L. P., 1007, 1015
*Mir, Z., 1017
Mitaru, B. N., 655
*Mitchall, K. G., 1012
*Monardes, H. G., 1022, 1023
Mondragon, I., 751
Moore, R. K., 781
Morrison, L. L., 239
Morisset, J., 59
Mowat, D. N., 885
*Mowat, D. N., 1000, 1006, 1008
Moxley, J. E., 781
*Moxley, J. E., 997, 998, 1021, 1023
Murphy, B. D., 989
Murray, B. B., 39
Murray, D. A., 885

Nakano, T., 421, 677
Nakaue, H. S., 707
Newman, J. A., 285, 315, 523, 791
Newsome, F. E., 823
Newton, G. L., 399
*Ng, Kwai Hang, K. F., 1021, 1022
*Nicholson, J. W. G., 1005, 1016
Nielsen, H. E., 221
Nkuuhe, J. R., 325

*Oderkirk, A., 1018
Owen, B. D., 993

Palmer, W. M., 67
*Palmer, W. M., 1019
Paré, J. P., 643
Pelletier, G., 59
Perez, A., 455
Peters, H. F., 263, 631
Peterson, R. G., 173
*Pfeiffer, W. C., 1009
Phillip, L. E., 613
*Phillip, L. E. 1004, 1005, 1013, 1014
*Pinwaha, A., 1011
Plank, C. O., 399
Pomar, C., 643
Powley, J. S., 707
Price, M. A., 299
*Price, M. A., 999, 1017, 1021
Proudfoot, F. G., 469, 736, 957
Proulx, J. G., 251, 861

Rae, R. C., 905
*Rafalowski, W., 1016
Rahnefeld, G. W., 49, 285, 523, 791
*Rau, H. E., 997
Rawlings, N., 331
*Reade, A. E., 1001
Reichert, R., 655
*Reid, J. P., 1024
Rempel, W. E., 497
*Rheaume, J., 999
Robblee, A. R., 225, 671
*Robinson, J. A. B., 1023
Roche, M., 663
*Rogers, M. V., 1014
*Rompala, R. E., 1003
*Rony, D. D., 1006, 1015
Roy, G. L., 27, 269, 511
*Rozzi, P., 1009
Ruckebusch, Y., 663
Runeckles, V. C., 823
*Rutley, B. D., 998

*Sadler, S. E., 1003
St-Laurent, G., 643
Sanford, L. M., 67, 811
Sarkar, N. K., 711
Sather, A. P., 741, 977

Sauer, F. D., 181, 191, 233
Schaeffer, L. R., 17, 39, 751
*Schaefer, A. L., 1014, 1023, 1024, 1025
Schneider, P. L., 985
*Scott, C., 997
Seoane, J. R., 367
*Shargool, M., 1021
Sharma, H. R., 871
Shelford, J. A., 173
*Shelford, J. A., 999
Shires, A., 201
Shrestha, J. N. B., 1, 497, 631, 835
Shull, L. R., 381
Sim, D. W., 551
Sleight, S. D., 381
*Smart, M. E., 1021
Song, H., 17, 751
Sonya, D., 67
Soofi, R., 373
Shrestha, J. N. B., 263
*Srihara, P., 1017
Steacy, G. M., 623, 855
Steinmetz, L. M., 985
Stobbs, L. A., 75
Stokes, M. R., 721, 985
*Stonehouse, D. P., 1000
*Stothers, S. C., 1011
Strain, J. H., 443, 579
Summers, J. D., 409
Swierstra, E. E., 81
Szkotnicki, J. E., 563

*Takagi, H., 997, 1009
Teather, R. M., 181, 191
Thacker, P. A., 213, 949
*Thacker, P. A., 1002
Thomas, D., 225
Thomas, J. W., 155
Thompson, B. K., 689
Thompson, J. R., 421, 677
*Thompson, J. R., 1019
Tong, A. K. W., 7, 315, 977
*Touchburn, S. P., 1012
Trenholm, H. L., 689, 967
*Trenkle, A., 1020
Turner, B. V., 349

*Valdes, E. V., 1001
Van Lunen, T. A., 731
Van Merle, F., 473
Veira, D. M., 163, 861
*Veira, D. M., 1006, 1004
Vesely, J. A., 27, 269, 511
Vilda Figueroa, J., 455

Wauthy, J., 511
*Weingardt, R., 1000
Weiss, G. M., 285, 523, 791
*Weiss, G. M., 1023
White, R. D., 391
Whiting, R., 993
*Wilkie, B. N., 1017
Willemot, C., 735
Wilton, J. W., 17, 751, 1000
*Wilton, J. W., 1003, 1009, 1022, 1023, 1024
*Winch, J. E., 1001
Winter, K. A., 27, 133, 269, 511
*Wisenburger, R. D., 1015
Wittenberg, K. M., 917
*Wright, J. A., 1016

Yang, T. S., 299
Yarney, T. A., 811
Yokoyama, M. T., 381
*Young, L. G., 1001, 1002
*Young, J. W., 1020

Zarkadas, C. G., 736

SUBJECT INDEX
CANADIAN JOURNAL OF ANIMAL SCIENCE
VOLUME 63, 1983

Page numbers in bold face refer to abstracts

Absorption
  flow of trace elements in sheep, 163
Acetate, **1021**
Acid-insoluble ash, **1015**
Adaptability, **1000**
Age
  serum parameters in the growing pig, 977
Age of dam adjustment factors
  birth weight of beef cattle, 7
Age of ram
  factors affecting testicular measurements, 835
Alfalfa, **1004**,
  associative effect of feeds on digestibility, 373
Alfalfa saponins
  alfalfa and avian feed preferences, 707
Alfalfa silage
  alfalfa silages and hay, 925
  flow of trace elements in sheep
Allergy, **1017**
Amino acids, **998, 1004**
  formaldehyde-treated canola meal, 905
Ammonia, **1013**
Ammonia treatment
  nutritional value of ammonia-treated corn silage, 871
Ammoniation
  ammonia and steam treatment of canola screenings, 429
Anestrus
  postpartum ovarian activity in beef cows, 331
Anion:cation balance, **1018**
Arsenic
  selenium-arsenic interaction in piglets, 239
Artificial rearing
  immunoglobulin fortified milk for low-birth weight pigs, 993
  protein levels and urea for lambs, 631
Ascorbic acid
  value of ascorbic acid during gestation on piglet growth, 683
Aspirin
  dietary aspirin for broiler chickens, 469
Associative effects
  associative effect of feeds on digestibility, 373
Automatic feeder
  automated feeder for metabolic studies, 985
Avoparcin
  avoparcin, monensin and zeranol for finishing steers, 361

Bacterial adhesion, **999**
Bales (round)
  alfalfa silages and hay, 925
Barley, **1015**
  avoparcin, monensin and zeranol for finishing steers, 361
  barley feed for pigs, 201
  digestibility of rye, corn, barley and oats, 97
Barrows
  boar carcass composition, 711
Beef, **1000**
  delayed chilling, 463
Beef cattle, **1000, 1007, 1009, 1016, 1023, 1024**
  carcass characteristics of 3-way cross beef cattle, 285
  cows, P_4 and temporary weaning on fertility of beef cows, 325
  lactobacillus inoculant in corn silage, 917
  nursing and cross-nursing in beef cattle, 849
  organized progeny testing, 17
  zeranol for feedlot bulls, 803
  postpartum ovarian activity in beef cows, 331
  sire evaluation, genetic evaluation of beef sires, 279
  steers, avoparcin, monensin and zeranol for finishing steers, 361
  weaning weights, yield and composition of milk in beef cattle, 751
Beet pulp, **1006**
Behavior, **1007**
  zeranol for feedlot bulls, 803
Bentonite
  buffering of silages, 939
  effect of buffers on corn silage, 141
Bicarbonate
  sodium bicarbonate for lambs, 613
Birds
  digestive motility in domestic birds, 663
Birth weight
  birth weight of beef cattle, 7
Blood coating, **1017**
Blood composition
  vitamin D and calf growth, 251

Blood parameters, **1011**
serum parameters in the growing pig, 977
Boars
boar carcass composition, 711
Body measurements, **1024**
body weight changes in lactating cows, 27
Body weight changes
body weight changes in lactating cows, 27
Body weights
body weights and dimensions of dairy heifers, 511
factors affecting testicular measurements, 835
Bone and serum minerals
dietary fat and mineral metabolism, 699
Bovine
butyrate activation in rumen epithelium, 355
degradation of formaldehyde-treated soybean meal, 181
Breed
averages, birth weight of beef cattle, 7
breed of sire and dam of cow effects and carcass traits, 791
carcass characteristics of three-way cross beef cattle, 523
factors affecting testicular measurements, 835
genetic effects for ewe productivity, 497
reproductive performance of ewes, 1
Broilers, **1003, 1012**
chickens, dietary aspirin for broiler chickens, 469
chicks, salinomycin and methionine in broiler diets, 409
parent, blood plasma and production traits in broilers 247
Bromocriptine, **1019**
Brown-shelled egg layers
glucosinolates and oxazolidinethione on fishy eggs, 673
Buckwheat, **1002**
buckwheat composition and nutritive value, 949
buckwheat-supplemented cereal grain, 213
Buffers
effect of buffers on corn silage, 141
sodium bicarbonate for lambs, 613
Bulls, **1001, 1019, 1021**
Butyrate:acetoacetyl-CoA transferase
butyrate activation in rumen epithelium, 355

Calcium, **1006**
calcium effects on dietary minerals, 173
dietary Ca and P for gilts and sows, 443
dietary fat and mineral metabolism, 699
Calves, **1007, 1010, 1013, 1017**
soy and blood plasteins for calves, 893
Calving, **1024**
Canada
hog carcass characteristics, 551
Cannula
nylon bag technique and protein digestibility by pigs, 233
Cannulation
gastrointestinal endoscopy of domestic ruminants, 349
Canola, **1003, 1017**
canola hulls in broiler chicken diets, 655
formaldehyde-treated canola meal, 905
phosphorus requirements of laying hens, 225
rapeseed meal in poultry meat breeder diets, 957
Canonical correlation
blood plasma and production traits in broilers, 247
Carcass, **1003, 1008, 1020, 1021**
breed of sire and dam of cow effects and carcass traits, 791
carcass characteristics of three-way cross beef cattle, 285, 523
carcass composition of cows, 563
carcass tissue and offal growth in sheep, 303
characteristics, boar carcass composition, 711
composition, ultrasonic rib fat, 315
effect of sex and diet on cattle performance, 861
hog carcass characteristics, 551
traits, mass selection for postweaning growth in swine, 49
Cartilage
pyridinoline in pig cartilage, 677
Castration
effect of sex and diet on cattle performance, 861
Cattle, **999, 1003, 1008, 1015**
breed of sire and dam of cow effects and carcass traits, 791
carcass characteristics of three-way cross beef cattle, 523
effect of sex and diet on cattle performance, 861
evaluation of glucopyranosylamines for cattle, 105
factors influencing dystocia in beef heifers, 255
feeding level-monensin effects on rumen metabolism, 855

mineral content of timothy, 133
sustained release implant, 75
vitamin D and calf growth, 251
Cell counts, **1023**
Cellulose digestion
associative effect of feeds on digestibility, 373
Cereal grains
buckwheat-supplemented cereal grain, 213
heavy veal production, 643
Chemical composition
carcass composition of cows, 563
Chickens
canola hulls in broiler chicken diets, 655
Circannual changes
social environment and ram seasonality, 811
Citrate
nutritional status of gestating ewes, 603
Clinical
mastitis in dairy cattle, 773
Colibacillosis
immunoglobulin fortified milk for low-birth weight pigs, 993
Collagen crosslink
pyridinoline in pig cartilage, 677
Comb dubbing, **1019**
Composition
breed of sire and dam of cow effects and carcass traits, 791
carcass characteristics of three-way cross beef cattle, 523
Compudose
sustained release implant, 75
Concentrate
hay maturity and concentrate level for dairy cows, 623
Conception rate
conception rate and embryonic survival in gilts, 579
Cooking
ammonia and steam treatment of canola screenings, 429
Copper, **997, 1021**
effect of bran on mineral absorption, 399
Corn, **1005, 1006, 1007, 1008, 1013**
digestibility of rye, corn, barley and oats, 97
Corn silage
effect of buffers on corn silage, 141
flow of trace elements in sheep, 163
lactobacillus inoculant in corn silage, 917
nutritional value of ammonia-treated corn silage, 871
Corpus luteum
postpartum ovarian activity in beef cows, 331
Correlations
mass selection for postweaning growth in swine, 49
milking speed and somatic cell count, 781
Coumestrol
estrogenic and antiestrogenic effects of plant estrogens, 823
Cows, **997, 1018, 1020, 1021, 1025**
carcass composition of cows, 563
Cross-nursing
nursing and cross-nursing in beef cattle, 849
Cross-suckling
nursing and cross-nursing in beef cattle, 849
Crossbreeding, **1010**
carcass characteristics of 3-way cross beef cattle, 285
Crossline
body weights and dimensions of dairy heifers, 511
Cull potatoes, **1016**
Cuts
breed of sire and dam of cow effects and carcass traits, 791
carcass characteristics of three-way cross beef cattle, 523

Dairy cattle, **1002, 1009, 1022, 1023**
body weight changes in lactating cows, 27
body weights and dimensions of dairy heifers, 511
bulls, heritability of nonreturn rate of dairy bulls, 39
calcium effects on dietary minerals, 173
calves, concentrated whey for calves, 587
calves, level of milk feeding, 473
hay maturity and concentrate level for dairy cows, 623
heifer reproduction, 269
herds, 1022, 1023
high moisture grains for dairy cows, 155
mastitis in dairy cattle, 773
nutritional value of ammonia-treated corn silage, 871
urea-treated corn silage for dairy cows, 191
Dantrolene
pork quality from pigs stunned by captive bolt, 299
Decks
pigs reared at three stocking densities on decks or floors, 731
Deficiency
mineral content of timothy, 133

Degradation
degradation of formaldehyde-treated soybean meal, 181
Delayed chilling, 463
Deoxynivalenol
effect of mycotoxins on fetal pig development, 689
Diet
digestive motility in domestic birds, 663
effect of sex and diet on cattle performance, 861
rapeseed meal in poultry meat breeder diets, 957
Digestibility, **1001, 1015**
alfalfa silages and hay, 925
ammonia and steam treatment of canola screenings, 429
barley feed for pigs 201
buckwheat composition and nutritive value, 949
buffering of silages, 939
calcium effects on dietary minerals, 173
evaluation of glucopyranosylamines for cattle, 105
feeding level-monensin effects on rumen metabolism, 855
heavy veal production, 643
nylon bag technique and protein digestibility by pigs, 233
Digestible energy
energy value of molasses for pigs, 455
Digestion, **1002, 1015**
thermal environment and ruminant digestion, 477
Digestive electromyography
digestive motility in domestic birds, 663
Dimensions
body weights and dimensions of dairy heifers, 511
Dry matter, **1005**
Duodenum, **1004**
changes of stomach and duodenum of sows, 59
Dystocia
factors influencing dystocia in beef heifers, 255

Early weaned
protein levels and urea for lambs, 631
Electronic, **1008**
Embryo transfer, **1024**
Embryonic survival
conception rate and embryonic survival in gilts, 579
EMME
carcass tissue and offal growth in sheep, 303
Endocrine, **1019**
Energy, **1010, 1012, 1020**
salinomycin and methionine in broiler diets, 409
Environment, **1019, 1021**
thermal environment and ruminant digestion, 477
Epithelium
butyrate activation in rumen epithelium, 355
Equine, **1009**
Ergot, **1011**
Erythrocyte transketolase
a survey of feedlot steers, 715
thiamin and Mg for feedlot steers, 117
Estradiol, **1000**
sustained release implant, 75
Estrogenic/antiestrogenic effects
estrogenic and antiestrogenic effects of plant estrogens, 823
Ewe productivity
genetic effects for ewe productivity, 497
Ewes, **1000**
photoperiod and prolactin release, 67

Faba bean cultivars
rumen digestion of faba bean, 89
Fasting, **1014**
Fat, **997, 1012**
carcass tissue and offal growth in sheep, 303
dietary fat and mineral metabolism, 699
Fatty acids, **1005**
Feed additives
avoparcin and implants for feeding steers, 885
Feed intake, **1002**
sodium bicarbonate for lambs, 613
Feed preferences
alfalfa and avian feed preferences, 707
Feed restriction, **1020**
conception rate and embryonic survival in gilts, 579
Feeding
frequency, feeding frequency and passage rate, 727
regime, serum parameters in the growing pig, 977
trials, ammonia and steam treatment of canola screenings, 429
value, barley feed for pigs, 201
Feedlot performance
zeranol for feedlot bulls, 803

Feedlot steers
a survey of feedlot steers, 715
thiamin and Mg for feedlot steers, 117
Fertility, **999**
heritability of nonreturn rate of dairy bulls, 39
Fetal pig
effect of mycotoxins on fetal pig development, 689
Fetus, **1014, 1021**
FGA sponge
reproductive performance of ewes, 1
Finishing diets, **1012**
First-litter sows
changes of stomach and duodenum of sows, 59
Fishmeal
urea-treated corn silage for dairy cows, 191
Fishy eggs
glucosinolates and oxazolidinethione on fishy eggs, 671
Forage, **999, 1007, 1015**
mineral content of timothy, 133
Forage quality, **1001**
Formaldehyde
degradation of formaldehyde-treated soybean meal, 181
formaldehyde-treated canola meal, 905
Formic acid
alfalfa silages and hay, 925
Fourrages
evaluation des fourrages, 367
Frequency
level of milk feeding, 473
Frequent feeding
automated feeder for metabolic studies, 985
Fuel, **1008**
Fungal fermentation, **1001**

Gastrointestinal endoscopy
gastrointestinal endoscopy of domestic ruminants, 349
Gastrointestinal tract, **1014**
Genetics, **1023, 1024, 1025**
correlation, inheritance of lamb weights, 263
effects, genetic effects for ewe productivity, 497
parameters, holstein type traits, 763
trends, genetic evaluation of beef sires, 279
Gestation, **1011**
length, progestagen effects on mink reproduction, 989
metabolic responses of ewes to protein, 595
nutritiona status of gestating ewes, 603
value of ascorbic acid during gestation on piglet growth, 683
Gilts, **1004, 1019**
conception rate and embryonic survival in gilts, 579
dietary Ca and P for gilts and sows, 443
effect of mycotoxins on fetal pig development, 689
prepubertal development in gilts, 81
Glucopyranosylamines
evaluation of glucopyranosylamines for cattle, 105
Glucose, **1021**
Glucosinolates
glucosinolates and oxazolidinethione on fishy eggs, 671
value of meadowfoam meal for dairy goats, 391
Goats, **1005**
value of meadowfoam meal for dairy goats, 391
Grading
hog carcass characteristics, 551
Growth, **999, 1003, 1010, 1013, 1021**
canola hulls in broiler chicken diets, 655
dietary Ca and P for gilts and sows, 443
effect of sex and diet on cattle performance, 861
efficiency, evaluation of glucopyranosylamines for cattle, 105
hormone, **1020, 1021**
prepubertal development in gilts, 81
promotants, avoparcin and implants for feeding steers, 885
promotants, sustained release implant, 75
pyridinoline in pig cartilage, 677
rate, dietary aspirin for broiler chickens, 469
vitamin D and calf growth, 251

Hay
hay maturity and concentrate level for dairy cows, 623
Heat increment, **1015, 1016**
Heifer growth
alfalfa silages and hay, 925
Heifer reproduction traits, 269
Henderson's new method
holstein type traits, 763
Hepatic metabolism, **1000**
Heritability, **997**
estimates, inheritance of lamb weights, 263
mass selection for postweaning growth in swine, 49

milking speed and somatic cell count, 781
of nonreturn rate of dairy bulls, 39
High-moisture grains
high moisture grains for dairy cows, 155
Hog
hog carcass characteristics, 551
Holsteins
formaldehyde-treated canola meal, 905
milking speed and somatic cell count, 781
Hulls
barley feed for pigs, 201
Hydroxyproline
vitamin C for swine diets, 421
Hydroxypyridinium compound
pyridinoline in pig cartilage, 677

Immunoglobin, **1012**
Immunoglobulin
immunoglobulin-fortified milk for low-birth weight pigs, 993
Impaired liver function
metabolic responses of ewes to protein, 595
Implantation
avoparcin and implants for feeding steers, 885
progestagen effects on mink reproduction, 989
sustained release implant, 75
In situ dacron bags
associative effect of feeds on digestibility, 373
In vitro
digestibility of rye, corn, barley and oats, 97
digestion, rumen digestion of faba bean, 89
Infrared scanning, **1008**
Insulin, **1020**
Intake, **1015**
Intake monensin
feeding level-monensin effects on rume metabolism, 855
Interaction
selenium-arsenic interaction in piglets, 239
Iron
effect of bran on mineral absorption, 399

Kinetics, **1005**

Lactating cows
buffering of silages, 939
effect of buffers on corn silage, 141
Lactating sows, **1011**
Lactation, **998, 1023**
Lactobacillus inoculant
lactobacillus inoculant in corn silage, 917
Lamb rearing
inheritance of lamb weights, 263
Lambs, **1012, 1020**
carcass tissue and offal growth in sheep, 303
protein levels and urea for lambs, 631
sodium bicarbonate for lambs, 613
Lasalocid, **1016**
Layers, **1018, 1019**
phosphorus requirements of laying hens, 225
Level
level of milk feeding, 473
Lighting, **1018**
Limnanthes
value of meadowfoam meal for dairy goats, 391
Linear programming, **1022**
Lipid
carcass composition of cows, 563
Liquid turnover rate
rumen turnover in sheep fed $NaHCO_3$, 721
Liver, **1021**
Livestock selection, **1022**
Lysine
lysine requirement of young pigs, 221

Machine-operator differences
ultrasonic rib fat, 315
Magnesium, **1006**
thiamin and Mg for feedlot steers, 117
Management systems, **1010**
Mastitis, **1025**
mastitis in dairy cattle, 733
Maternal effects
genetic evaluation of beef sires, 279
Mating
social environment and ram seasonality, 811
Maturity
hay maturity and concentrate level for dairy cows, 623
Meadowfoam meal
value of meadowfoam meal for dairy goats, 391
Measurement, **1008**
Meat breeders
rapeseed meal in poultry meat breeder diets, 957
Metabolic parameters
long-term feeding of dehydrated poultry waste, 381
Metabolism
the effects of the mycotoxin zearalenone on pigs, 967
Metabolite responses
metabolic responses of ewes to protein, 595

Metabolizable energy, **1015, 1016**
canola hulls in broiler chicken diets, 655
energy value of molasses for pigs, 455
Methionine
salinomycin and methionine in broiler diets, 409
Microbiological quality
delayed chilling, 463
Microcomputers, **1023**
Milk, **1021, 1022**
value of meadowfoam meal for dairy goats, 391
Milk composition
yield and composition of milk in beef cattle, 751
Milk feeding
level of milk feeding, 473
Milk fever, **1018**
Milk production, **1007**
formaldehyde-treated canola meal, 905
Milk replacers, **1017**
soy and blood plasteins for calves, 893
Milk yield
yield and composition of milk in beef cattle, 751
Milking speed, **1025**
milking speed and somatic cell count, 781
Milking time, **1025**
Minerals
calcium effects on dietary minerals, 173
mineral content of timothy, 133
Mink
progestagen effects on mink reproduction, 989
Modelling, **1010**
Molasses
energy value of molasses for pigs, 455
Monensin
avoparcin, monensin and zeranol for finishing steers, 361
feeding-level-monensin effects on rumen metabolism, 855
Multiple suckling
heavy veal production, 643
Muscle, **999**
relaxant, pork quality from pigs stunned by captive bolt, 299
Mycotoxin
effect of mycotoxins on fetal pig development, 689
the effects of the mycotoxin zearalenone on pigs, 967
MgO
effect of buffers on corn silage, 141
$NaHCO_3$
buffering of silages, 939
effect of buffers on corn silage, 141
NaOH coating, **1017**
N-balance, **1013, 1014**
N-solubility, **1014**
Neonate, **1011**
Newborn, **1011**
Nitrogen balance
nutritional value of ammonia-treated corn silage, 871
Nitrogen utilization
sodium bicarbonate for lambs, 613
Nonesterified fatty acids
nutritional status of gestating ewes, 603
Nova Scotia, **1009**
NPN
evaluation of glucopyranosylamines for cattle, 105
Nursing
nursing and cross-nursing in beef cattle, 849
Nutritive value, **1002**
buckwheat composition and nutritive value, 949
Nylon bags
evaluation des fourrages, 367
nylon bag technique and protein digestibility by pigs, 233

Oats
digestibility of rye, corn, barley and oats, 97
Offal, **1020**
carcass tissue and offal growth in sheep, 303
Optimum designs
organized progeny testing, 17
Osteochondrosis
vitamin C for swine diets, 421
Ovine, **1000**
Oxazolidinethione
glucosinolates and oxazolidinethione on fishy eggs, 671

Parasites, **997, 1009**
Part records
part record selection in swine, 741
Particle size, **1007**
Particulate and fluid passage
feeding frequency and passage rate, 727
Performance
dietary fat and mineral metabolism, 699
evaluation, part record selection in swine, 741
long-term feeding of dehydrated poultry waste, 381

test, **1024**
Phosphorus, **1006**
dietary Ca and P for gilts and sows, 443
requirements of laying hens, 225
Photoperiod
photoperiod and prolactin release, 67
Physiological rhythms
digestive motility in domestic birds, 663
Phytoestrogens
estrogenic and antiestrogenic effects of plant estrogens, 823
Piglet survival
value of ascorbic acid during gestation on piglet growth, 683
Piglets, **998, 1011, 1012**
immunoglobulin-fortified milk for low-birth-weight pigs, 993
selenium-arsenic interaction in piglets, 239
Pigs, **1004**
ammonia and steam treatment of canola screenings, 429
barley feed for pigs, 201
nylon bag technique and protein digestibility by pigs, 233
piridinoline in pig cartilage, 677
pork quality from pigs stunned by captive bolt, 299
serum parameters in the growing pig, 977
the effects of the mycotixin zearalenone on pigs, 967
vitamin C for swine diets, 421
Pituitary hormones
social environment and ram seasonality, 811
Plasma
blood plasma and production traits in broilers, 247
Plasma vitamin C
vitamin C for swine diets, 421
Plastein
soy and blood plasteins for calves, 893
PMSG
reproductive performance of ewes, 1
Polymorphism, **1022**
Pork, **1008**
Postpartum
anestrus, P_4 and temporary weaning on fertility of beef cows, 325
ovarian activity in beef cows, 331
Postweaning
postweaning reproductive tract changes of sows, 571
Poultry
alfalfa and avian feed preferences, 707
rapeseed meal in poultry meat breeder diets, 957
Poultry manure
long-term feeding of dehydrated poultry waste, 381
Predicting nutritional requirements
nutritional status of gestating ewes, 603
Pregnancy
effect of mycotoxins on fetal pig development, 689
Processing
digestibility of rye, corn, barley and oats, 97
Production
blood plasma and production traits in broilers, 247
Progeny testing
organized progeny testing, 17
Progestagen effects
progestagen effects on mink reproduction, 989
Progesterone, **998**
P_4 and temporary weaning on fertility of beef cows, 325
Prolactin, **1019**
Photoperiod and prolactin release, 67
Protease
degradation of formaldehyde-treated soybean meal, 181
Protein, **1014, 1017, 1021, 1022**
barley feed for pigs, 201
digestibility, canola hulls in broiler chicken diets, 655
level, formaldehyde-treated canola meal, 905
lysine requirement of young pigs, 221
nylon bag technique and protein digestibility by pigs, 233
requirements, protein levels and urea for lambs, 631
status, metabolic responses of ewes to protein, 595
PSE
pork quality from pigs stunned by captive bolt, 299
Puberty
prepubertal development in gilts, 81
PUN
feeding level-monensin effects on rumen metabolism, 855
Pureline
body weights and dimensions of dairy heifers, 511
Pyridinoline
pyridinoline in pig cartilage, 677

Quinine
alfalfa and avian feed preferences, 707

Rabbits
value of meadowfoam meal for dairy goats, 391
Ralgro, **1021**
Ram
social environment and ram seasonality, 811
Range beef heifers
factors influencing dystocia in beef heifers, 255
Rapeseed meal
glucosinolates and oxazolidinethione on fishy eggs, 671
rapeseed meal in poultry meat breeder diets, 957
Rapeseed screenings
ammonia and steam treatment of canola screenings, 429
Rats, **1002**
buckwheat composition and nutritive value, 949
buckwheat-supplemented cereal grain, 213
estrogenic and antiestrogenic effects of plant estrogens, 823
Reference sires
organized progeny testing, 17
Region
hog carcass characteristics, 551
Repeatabilities
yield and composition of milk in beef cattle, 751
Reproduction, **1001**
dietary Ca and P for gilts and sows, 443
reproductive performance of ewes, 1
Reproductive cycle
changes of stomach and duodenum of sows, 59
Reproductive tract
prepubertal development in gilts, 81
Reproductive tract growth
postweaning reproductive tract changes of sows, 571
Requirement
lysine requirement of young pigs, 221
Respiration calorimetry
energy value of molasses for pigs, 455
Rumen
butyrate activation in rumen epithelium, 355
degradation of formaldehyde-treated soybean meal, 181
Rumen fermentation
feeding frequency and passage rate, 727
Rumen volatile acids
concentrated whey for calves, 587
Ruminants, **997**
evaluation des fourrages, 367
gastrointestinal endoscopy of domestic ruminants, 349
thermal environment and ruminant digestion, 477
Rumination, **1007**
Rye, **1011**
digestibility of rye, corn, barley and oats, 97

Sachets de nylon
evaluation des fourrages, 367
Salinomycin
salinomycin and methionine in broiler diets, 409
Salmonids, **1003**
Salt
urea metabolism in steers, 149
Selection, **1023**
mass selection for postweaning growth in swine, 49
Selenium, **999**
selenium-arsenic interaction in piglets, 239
Separable grain, **1006**
Serum
calcium effects on dietary minerals, 173
Sex, **1020**
serum parameters in the growing pig, 977
Sex effects
carcass characteristics of 3-way cross beef cattle, 285
Sexual development
zeranol for feedlot bulls, 803
Sheep, **1002, 1004, 1006, 1014, 1015, 1021**
associative effect of feeds on digestibility, 373
automated feeder for metabolic studies, 985
factors affecting testicular measurements, 835
flow of trace elements in sheep, 163
genetic effects for ewe productivity, 497
inheritance of lamb weights, 263
lactobacillus inoculant in corn silage, 917
mineral content of timothy, 133
nutritional value of ammonia-treated corn silage, 871
reproductive performance of ewes, 1
rumen turnover in sheep fed $NaHCO_3$, 721
Silage, **1004, 1005, 1006, 1007, 1008, 1013**
intake, buffering of silages, 939
Silos, **1005**

Sodium bicarbonate
rumen turnover in sheep fed $NaHCO_3$, 721
Sodium hydroxide
high moisture grains for dairy cows, 155
Solids retention time
rumen turnover in sheep fed $NaHCO_3$, 721
Solubility
flow of trace elements in sheep, 163
Somatic cell count
milking speed and somatic cell count, 781
Sows
dietary Ca and P for gilts and sows, 443
postweaning reproductive tract changes of sows, 571
Soybeans, **1017**
Soybean meal
degradation of formaldehyde-treated soybean meal, 181
urea-treated corn cilage for dairy cows, 191
Soybean stover
associative effect of feeds on digestibility, 373
Spectroscopy, **1001**
Starter pigs
lysine requirement of young pigs, 221
Station testing
part record selection in swine, 741
Steers, **1005, 1006, 1013, 1015, 1016**
avoparcin and implants for feeding steers, 885
long-term feeding of dehydrated poultry waste, 381
Stocking density
pigs reared at three stocking densities on decks or floors, 731
Stomach
changes of stomach and duodenum of sows, 59
Straw, **1001**
Stunning
pork quality from pigs stunned by captive bolt, 299
Subclinical
mastitis in dairy cattle, 773
Suckling
nursing and cross-nursing in beef cattle, 849
Sudden death syndrome
dietary aspirin for broiler chickens,469
Sulphur, **999**
Supplement
buckwheat-supplemented cereal grain, 213
Swine, **1008, 1023**
mass selection for postweaning growth in swine, 49
part record selection in swine, 741
pigs reared at three stocking densities on decks or floors, 731
prepubertal development in gilts, 81
Swine breeds, **997**
Systems, **1000**

3-hydroxybutyrate
nutritional status of gestating ewes, 603
Tannins
canol hulls in broiler chicken diets, 655
Temperature, **1003, 1012**
thermal environment and ruminant digestion, 477
Testicular measurements
factors affecting testicular measurements, 835
Testis
social environment and ram seasonality, 811
Testosterone
social environment and ram seasonality, 811
Thiamin
a survey of feedlot steers, 715
thiamin and Mg for feedlot steers, 117
Time
ultrasonic rib fat, 315
Timothy, **1005**
mineral content of timothy, 133
TPP effects
a survey of feedlot steers, 715
thiamin and Mg for feedlot steers, 117
Trace elements
flow of trace elements in sheep, 163
Trace minerals, **997**
effect of bran of mineral absorption, 399
selenium-arsenic interaction in piglets, 239
TRH
photoperiod and prolactin release, 67
Trimethylamine
glucosinolates and oxazolidinethione on fishy eggs, 671
Type traits
holstein type traits, 763

Udder, **1025**
Ultrasonic measurements
ultrasonic rib fat, 315
Urea **1013**
protein levels and urea for lambs, 631
Urea metabolism
urea metabolism in steers, 149
Urea-treated silage
urea-treated corn silage for dairy cows, 191

Uterus
estrogenic and antiestrogenic effects of plant estrogens, 823
Utilization
concentrated whey for calves, 587

Veal calves
heavy veal production, 643
VFA
feeding level-monensin effects on rumen metabolism, 855
Vitamin C
value of ascorbic acid during gestation on piglet growth, 683
vitamin C supplementation for swine diets, 421
Vitamin D
vitamin D and calf growth, 251
Vomitoxin, **1004**
effect of mycotoxins of fetal pig development, 689

Weaner pigs
dietary fat and mineral metabolism, 699
pigs reared at three stocking densities on decks or floors, 731
selenium-arsenic interaction in piglets, 239
Whey
concentrated whey for calves, 587

Year effects
carcass characteristics of 3-way cross beef cattle, 285

Zearalanol
estrogenic and antiestrogenic effects of plant estrogens, 823
Zearalenone
the effects of the mycotoxin zearalenone on pigs, 967
Zeranol
avoparcin, monensin and zeranol for finishing steers, 361
zeranol for feedlot bulls, 803
Zinc, **1001, 1011, 1021**
effect of bran on mineral absorption, 399